NORTH SASKATCHEWAN RIVER VALLEY
Area Redevelopment Plan
Bylaw No. 7188

February 1985

NORTH SASKATCHEWAN RIVER VALLEY AREA REDEVELOPMENT PLAN

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1. INTRODUCTION

1.1 A TRUE ALBERTA HERITAGE

For 75 years, municipal, regional, and provincial authorities have sought to protect the North Saskatchewan River Valley's natural open spaces from urban development and provide a park system suitable for a metropolitan area.

In 1915 the Provincial Government adopted a report by Frederick C. Todd, landscape architect, who recommended protection of the River Valley environment so as to provide Edmontonians with a contiguous recreation and open space system. By 1984, this goal has been largely accomplished and probably surpasses the vision of even the most optimistic of city fathers. The North Saskatchewan River Valley and Ravine System now encompasses an area of 7,425 hectares (18,348 acres), much of it designated for recreational use.

1.2 AUTHORITY FOR THE PLAN

At its meeting on 1983 12 14, City Council directed the Administration to prepare a revised North Saskatchewan River Valley Area Redevelopment Plan indicating that the River Valley and Ravine System shall be primarily used for major urban and natural parks and environmental protection uses. Council also directed that the residential communities of South Rossdale and South Cloverdale should remain as residential communities within this Plan area and that Centretown, Lavigne and West Rossdale should remain as residential areas in other plans.

1.3 PURPOSE OF THE PLAN

The purpose of this Plan is to protect the North Saskatchewan River Valley and Ravine System as part of Edmonton's valuable open space heritage and to establish the principles for future implementation plans and programmes for parks development and the retention of the designated residential areas of Rossdale and Cloverdale. This Plan then becomes the first part of a comprehensive River Valley and Ravine management programme, by enunciating policies and a plan of action.

1.4 DEFINITIONS

Terms and words in this Plan which are defined in the Planning Act, the Edmonton Land Use Bylaw and the General Municipal Plan have the same meaning.

MAJOR FACILITY

A MAJOR FACILITY is defined as any permanent or temporary development or use which is included in the Edmonton Land Use Bylaw under the following use class definition:

- basic services
- community, educational, recreational, cultural services
- natural resource development.

TRANSPORTATION FACILITY

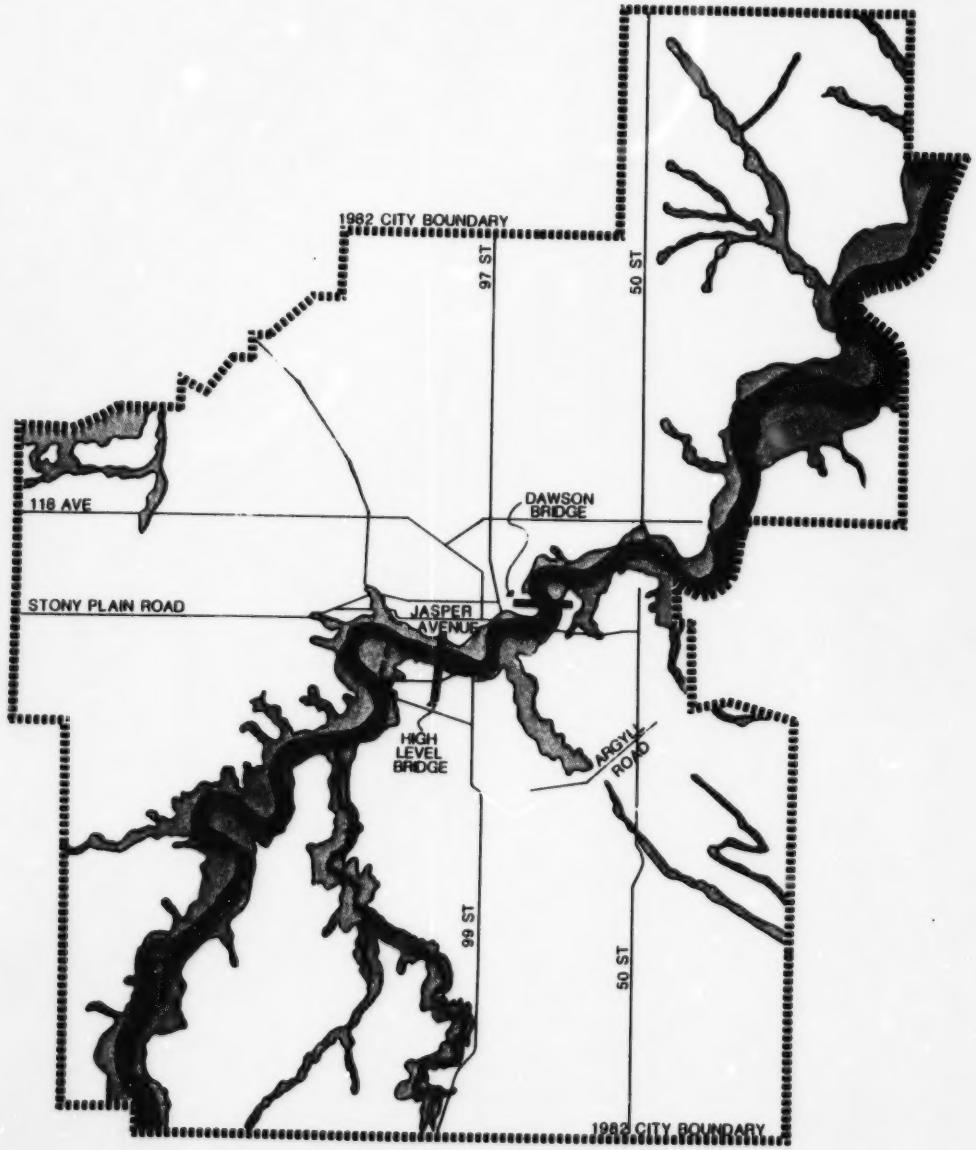
A TRANSPORTATION FACILITY is any existing or proposed public roadway or transit corridor or any proposed improvements to a public roadway or transit corridor that is located in the Plan area.

HAZARDOUS LANDS

HAZARDOUS LANDS are those lands suitable to be dedicated as "environmental reserve" as defined by Section 98, Planning Act, R.S.A. 1980 C. P-9.

INTENSITY OF RECREATIONAL USES

INTENSITY OF RECREATIONAL USES covers a range of recreational activities which considers the spectrum of uses from a low intensity use to a high intensity use. A low intensity use is a minimum level of recreational development with the possible existence of a minor amenity structure. An example is the trail and buffer system in Capital City Recreation Park. A high intensity use is defined as recreational development which includes a major structure and substantial parking facilities and includes any site when used for a major public event. An example is the Kinsmen Fieldhouse complex.



LOCATION MAP

2. PLAN CONCEPT, GOALS, AND OBJECTIVES

2.1 CONCEPT PLAN:

The North Saskatchewan River Valley Area Redevelopment Plan is a comprehensive plan which envisions the major portion of the River Valley and Ravine System for use as an environmental protection area and for major urban and natural parks. For the Central area of the River Valley the Plan envisions a sensitive mix of land uses - residential, recreational, institutional and commercial development, which are of varying intensities compatible with Downtown activities. There will be limited use of the Plan area for residential, transportation, public utility and institutional development. The concept for the proposed land use is based on the fundamental philosophy that a continuous open space system, interspersed with recreational activity nodes, can meet the diverse demands for recreation in an urban setting and yet protect the river valley environment. A linear system offers open space edges in the framework of Edmonton's urban development and provides maximum visual impact and physical accessibility to the valley.

One of the purposes of this Plan is to eventually create a recreation-oriented land use system which incorporates formal and informal parks and nature areas which are linked through a series of paths, trails and open spaces. This system will be developed so as to respect the overall natural environment of the River Valley and its tributary ravine lands. Because of its large size, relative to the City of Edmonton and the restricted access to it, other land uses whose functions are compatible with major parks use will be incorporated. These may include, for example entertainment, cultural facilities, restaurants.

For the River Valley, the concept plan reflects a generalized land use proposal which identifies locations for certain levels of recreational activity. This is based on the most suitable means to satisfy the recreational demands of the citizens of Edmonton in the River Valley. It also considers the environmental suitability of the intensity of levels of recreational activity. Recognizing the potential for recreational development throughout the Plan area, the concept plan proposes that the most intensified levels of recreational development which require a major structure and substantial parking facilities should be located in those areas of the Plan that are the most physically capable i.e., the highly developable river terraces. So as to limit the need for major roadways in the Plan area, these levels of recreational activity will be encouraged at locations along existing arterial roadways and existing and future River crossings. At the other end of the spectrum, a lesser intense level of recreational activity such as walking trails should be located in areas of greater environmental sensitivity. In the most

physically constrained areas i.e., very steep slopes that are potential problems of erosion and bank instability, no recreational or other development would occur.

In order to preserve sensitive or unique natural areas and to avoid the problems and costs associated with development in hazardous or sensitive areas, the Concept Plan does not encourage urban development in most of the River Valley. Only in the Central Area will urban communities be developed and maintained.

Where it is deemed essential to allow building outside the Central Area or where existing regulations permit it, policies and additional regulations are established. The intent is to minimize disruption of the natural environment and to prevent or minimize future property damage due to flooding and slope instability.

2.2 MAJOR GOALS:

The North Saskatchewan River Valley and Ravine System is the most unique natural feature of Edmonton and the largest urban open space in North America. As in integral part of the City's urban fabric, the System represents a unique set of problems and opportunities. As Edmonton grows and changes and as land becomes more valuable the River Valley may become the threatened by commercial and industrial uses, as well as by civic uses such as public utilities. The municipal level of government has probably exerted the greatest development pressure on the River Valley with public utility proposals and transportation plans. These uses tend to be incompatible with the aims of nature preservation and parkland development. This Plan begins a process for more effectively managing the future of the River Valley and Ravine System.

The major goals of the North Saskatchewan River Valley Area Redevelopment Plan are:

1. to ensure preservation of the natural character and environment of the North Saskatchewan River Valley and its Ravine System.

2. to establish a public metropolitan recreation area

3. to provide the opportunity for recreational, aesthetic and cultural activities in the Plan area for the benefit of Edmontonians and visitors of Edmonton.

4. to ensure the retention and enhancement of the Rossdale and Cloverdale communities in the River Valley.

2.3 PARKLAND DEVELOPMENT OBJECTIVES:

2.3.1. To provide park, open space, and a variety of recreational, educational and cultural uses.

2.3.2. To provide a metropolitan recreation and conservation areas.

2.3.3. To provide a pedestrian movement network, and other non-motorized vehicular networks including the provision of River and Ravine Crossings, throughout the Plan area.

2.3.4. To ensure that park and recreation facilities have pedestrian and vehicular access.

2.3.5. To encourage water-oriented recreational modes of transportation to link the various activity nodes within the Plan area.

2.3.6. To promote the conservation and rehabilitation of archaeological, paleontological, architectural and historic resources within the parks and open space system.

2.3.7. To promote an exemplary standard of landscape, urban, and architectural design for all proposed developments, park amenities and the general environment.

2.3.8 To ensure handicapped people have access to the River Valley and Ravine System.

2.4 ENVIRONMENTAL PROTECTION OBJECTIVES:

2.4.1. To establish the River Valley and Ravine System as an environmental protection area.

2.4.2. To consider environmental factors when planning for use in the River Valley.

2.5 TRANSPORTATION OBJECTIVES;

2.5.1. To support a transportation system which serves the needs of the City and the Plan area, yet is compatible with the parkland development and the environmental protection of the River Valley and its Ravine System.

2.6	MAJOR FACILITY AND NATURAL RESOURCE DEVELOPMENT OBJECTIVES;	2.6.1.	To control the expansion and construction of major facilities and minimize the adverse impacts of major facilities on the natural environment and park development.
		2.6.2	To control the further development of natural resource extraction and to minimize the adverse impacts of natural resource extraction operations on the natural environment and park developments.
		2.6.3.	To prohibit the development of utility corridors, including utility right-of-ways, except for direct river crossings.
		2.6.4.	To minimize the adverse environmental effects of all existing and future public works, landfill and solid waste disposal facilities.
		2.6.5	To control the design and construction of future public works in a manner which will enhance the natural environment.
2.7	AGRICULTURAL LAND USE OBJECTIVES:	2.7.1.	To continue agricultural activities.
2.8	RESIDENTIAL LAND USE OBJECTIVE	2.8.1	To control residential development in the Plan area and to limit its impact and extent on the natural environment and the parks system.
2.9	CENTRAL AREA LAND USE OBJECTIVES	2.9.1	To designate the Central Area as an area where community plans will be prepared.
		2.9.2	To establish general land use guidelines and direction for the future land use of the Central Area of the River Valley.

3. PLAN POLICIES

3.1 INTRODUCTION:

The policies stated in the following sections of the North Saskatchewan River Valley Area Redevelopment Plan shall apply to the entire Plan area as described in Schedule A, except where stated otherwise.

For the purpose of this Bylaw, "Policy" shall mean other policies of Council with respect to all matters relating to the North Saskatchewan River Valley Area Redevelopment Plan Area.

All drawings are included for illustrative purposes. Maps referred to as Schedules are included as part of the Plan Bylaw.

3.2 PARKLAND DEVELOPMENT POLICIES:

In keeping with the Parkland Development Objectives in Section 2.3, the following policies are identified:

3.2.1 Natural Conservation Area

It is a policy of this Plan that those areas which have significant vegetation, potential wildlife and waterfowl habitat, or other unique natural physical features shall be managed as nature conservation areas and may be used for outdoor education, interpretation or low intensity recreational activities.

3.2.2 Intensity Range of Recreational Uses

It is a policy of this Plan that a low to high intensity range of recreational activities will be developed and managed within the River Valley.

3.2.3 Location of Recreational Facilities

It is the policy of this Plan to locate the higher intensity recreational and cultural facilities in close proximity to major roadways, public transit routes and direct River crossings, except in the Central area.

3.2.4. Ravines and River Edges

It is a policy of this Plan that ravines and river edge lands will be used for low intensity outdoor recreational use.

3.2.5 Viewpoint Parks

It is a policy of this Plan that selected sites with existing and outstanding view potential will be encouraged to be developed as "viewpoint" parks.

3.2.6 Accessory Land Uses

It is a policy of this Plan that accessory land uses such as cafes, restaurants, bicycle rentals or other commercial establishments which are complementary to recreational and open space opportunities and harmonious to the natural environment will be encouraged where land use districting permits.

3.2.7 Environmental Reserve Dedication

It is a policy of this Plan that the City may acquire through subdivision all lands lying below the geomorphic limit of the River Valley and Ravine System as Environmental Reserve, in accordance with the provisions of the Planning Act. At the discretion of the Subdivision Officer or the Municipal Planning Commission, the geographic top-of-the-bank may replace the geomorphic limit in this Policy.

3.2.8 Use of Environmental Reserve Lands

It is the policy of this Plan that all lands that are acquired by the City through the subdivision process as Environmental Reserve shall be managed as parks and open spaces.

3.2.9 Capital City Recreation Park

It is a policy of this Plan that the City will support the concept of the extension of the Capital City Recreation Park to the City's Northeast and Southwest boundaries.

3.2.10 Trail System

It is the policy of this Plan to establish pedestrian and other non-motorized vehicular movement systems; which includes bicycles, cross-country ski-trail developments and equestrian trails in selected areas; as the primary modes of movement along and through the River Valley.

3.2.11 River and Ravine Crossings

It is the policy of this Plan to develop and/or improve River and Ravine crossings for pedestrians and other non-motorized movement systems so as to connect recreational activity nodes and other park amenities.

3.2.12 Roadway Access and Parking

It is the policy of this Plan to develop a vehicular distribution and parking system in the River Valley that permits access to parking areas but restricts vehicular penetration through recreational and park areas. This policy does not restrict emergency vehicle access required for public safety.

3.2.13 Recreational Water Transportation

It is the policy of this Plan to encourage and support recreational programmes and facilities for water-borne modes of transportation in conjunction with detailed plans for parks and recreation development.

3.2.14 Historic Resources Inventory

It is the policy of this Plan to continue to develop and maintain an inventory of all historic and archeological resources and recognize those resources in planning or land use decisions.

3.2.15 Designation of Historic Resources

It is the policy of this Plan that under the Historic Resources Act of Alberta, buildings or groups of buildings maybe designated as Municipal Historic Resources or Municipal Historic Areas when appropriate.

3.2.16 Minimize Land Use Conflicts

It is the policy of this Plan that land use conflicts between parks and non-parks uses will be minimized by appropriate facility siting, quality design, noise and visual buffering.

3.2.17 Urban Design and Architectural Guidelines

It is the policy of this Plan that all public development will conform to Council approved environmental, urban and architectural design guidelines to be developed in future studies and park development plans.

3.2.18 Access for the Handicapped

It is the policy of this Plan that recreational facilities will be designed, if feasible, to accommodate access and other requirements of the handicapped.

3.3 ENVIRONMENTAL PROTECTION POLICIES

In keeping with the Environmental Protection Objectives in Section 2.4, the following policies are identified:

3.3.1. Preservation of Natural Resource Areas

It is the policy of this Plan to recognize the Plan Area as containing natural resource areas which will be preserved and enhanced for recreational, scenic, and ecological purposes.

3.3.2 Identification of Sensitive and Hazardous Lands

It is the policy of this Plan to identify environmentally sensitive and hazardous lands through a detailed resource management approach.

3.3.3. Application of Environmental Impact Assessment

It is the policy of this Plan to ensure the application of an environmental impact screening and assessment to all proposed public development and development on public land.

3.3.4 Development on Environmentally Sensitive Lands

It is the policy of this Plan that when a development application is received, the Development Officer shall determine if the subject lands are environmentally sensitive to development, and may require additional information be provided. In determining whether a permit shall be issued and what conditions, if any, are required to eliminate or mitigate environmental damage, the Development Officer may consult with other civic departments and environmental agencies.

3.3.5 Development on Hazardous Lands - Unstable Slopes

It is the policy of this Plan that development will avoid areas with unstable slope conditions. Where development in such locations is deemed to be essential or is permitted by existing regulation, the Development Officer may require, from a registered Professional Engineer, detailed construction techniques to ensure stability of land and buildings.

3.3.6 Floodplain Management Guidelines

It is the policy of this Plan that the City will undertake, with other public authorities, the identification and designation of flood risk areas, and adopt floodplain management guidelines.

3.4 TRANSPORTATION POLICIES

In keeping with the Transportation Objectives in Section 2.5, the following policies are identified:

3.4.1 Direct River and Direct Ravine Crossings by Major Transportation Corridors.

It is the policy of this Plan that new transportation corridors will not be approved except for direct River and direct Ravine crossings which are deemed essential and approved by City Council as in Policy 3.5.3.

3.4.2 Negative Impacts of Existing and Future Transportation Facilities.

It is the policy of this Plan that existing and future transportation facilities will be reviewed with the objective to eliminate, minimize or mitigate the negative effects of the facilities through design and landscaping measures.

3.4.3 Environmental Impact Assessment for Transportation Facility Proposals.

It is the policy of this Plan that proposals for the upgrading of approved transportation corridors and attendant facilities be subject to an environmental impact screening assessment (Schedule D) and that the identified adverse impacts be eliminated, minimized or mitigated through design and landscaping measures.

3.5 MAJOR FACILITY AND NATURAL RESOURCE DEVELOPMENT POLICIES

In keeping with the Major Facility and Natural Resource Development Objectives in Section 2.6, the following policies are identified:

3.5.1 Development of Major Facilities:

It is a policy of this Plan that major public facilities shall not be constructed or expanded unless their location within the River Valley is deemed essential and approved by City Council.

3.5.2 Development of Natural Resource Extraction Industries

It is a policy of this Plan that natural resource extraction industries shall not be developed unless their location within the River Valley is deemed essential by Council.

3.5.3 Site Location Study and Environmental Impact Screening Assessment

It is a policy of this Plan that all proposals for the development of a major facility that is publicly owned or is developed on public lands shall be subject to an environmental impact screening assessment as outlined in Schedule D, and a detailed site location study detailing costs, and social, environmental and institutional constraints which make a River Valley location essential must be prepared for Council approval. These studies shall be undertaken prior to Council committing funds for capital expenditure for the development of this proposal.

3.5.4 Protection of Unique Areas

It is a policy of this Plan that the City will not support applications for facility development to the Energy Resources Conservation Board for resource extraction in those portions of the Plan area which possess unique environmental features (topographical, geological, historical, archaeological).

3.5.5 Landscaping and Site Design Requirements

It is a policy of this Plan that landscaping and other design considerations for buffering extraction operations be a condition of approval of resource extraction operations.

3.5.6 Disposal sites for clean fill

It is a policy of this Plan that sites for storage of clean fill for reclamation of extraction operations shall be assigned as a condition of approval.

3.5.7 Reclamation and Restoration of Natural Resource Extraction Sites

It is a policy of this Plan that a reclamation and restoration programme providing details on grading, landscaping or other treatments necessary to restore extraction sites for park or recreational use shall be condition of approval for resource extraction operations and Civic maintenance activities.

3.5.8 Conformity to Provincial Land Conservation Guidelines

It is a policy of this Plan that natural resource extraction operators conform to the Land Conservation Guidelines of the Alberta Land Surface Conservation and Reclamation Act.

3.5.9 Storm Water Management

It is a policy of this Plan to employ the use of storm water management techniques to reduce the adverse impacts of increased volume and rate of stormwater discharges, particularly along the River Valley edge and its tributary ravines.

3.5.10 Monitor and Regulation of Water Quality

It is a policy of this Plan to monitor and to regulate water quality and flows where possible within the watershed and to operate with other governmental agencies in the achievement of effective control.

3.6 AGRICULTURAL LAND USE POLICY

In keeping with the Agricultural Land Use Objective in Section 2.7, the following policy is identified:

3.6.1 Agricultural Activities

It is a policy of this Plan that existing agricultural activities may continue subject to Policies 3.2.7 and 3.2.8.

3.7 RESIDENTIAL LAND USE POLICIES

In keeping with the Residential Land Use Objective in Section 2.8 the following policies are identified:

3.7.1 Present Residential Development

It is a policy of this Plan to recognize existing residential development and those lands presently districted for residential development outside the Central Area.

3.7.2 Prohibit Additional Residential Development

It is a policy of this Plan that additional residential lots will not be created, except in the Central Area.

3.8 CENTRAL AREA LAND USE POLICIES

In keeping with the Central Area Land Use Objectives in Section 2.9, the following policies are identified:

3.8.1 It is a policy of this Plan to recognize the existing communities of Rossdale and Cloverdale as illustrated on the Central Area Map (page 17).

3.8.2 It is a policy of this Plan that when the future land use of this area is determined, the detailed development plan and community plan proposals should consider the following guidelines:

1. Primarily residential development will be proposed in the designated areas of South Rossdale and South Cloverdale. (See Central Area Map p. 17).

2. New or expanded major facilities which adversely impact the residential communities shall be discouraged.

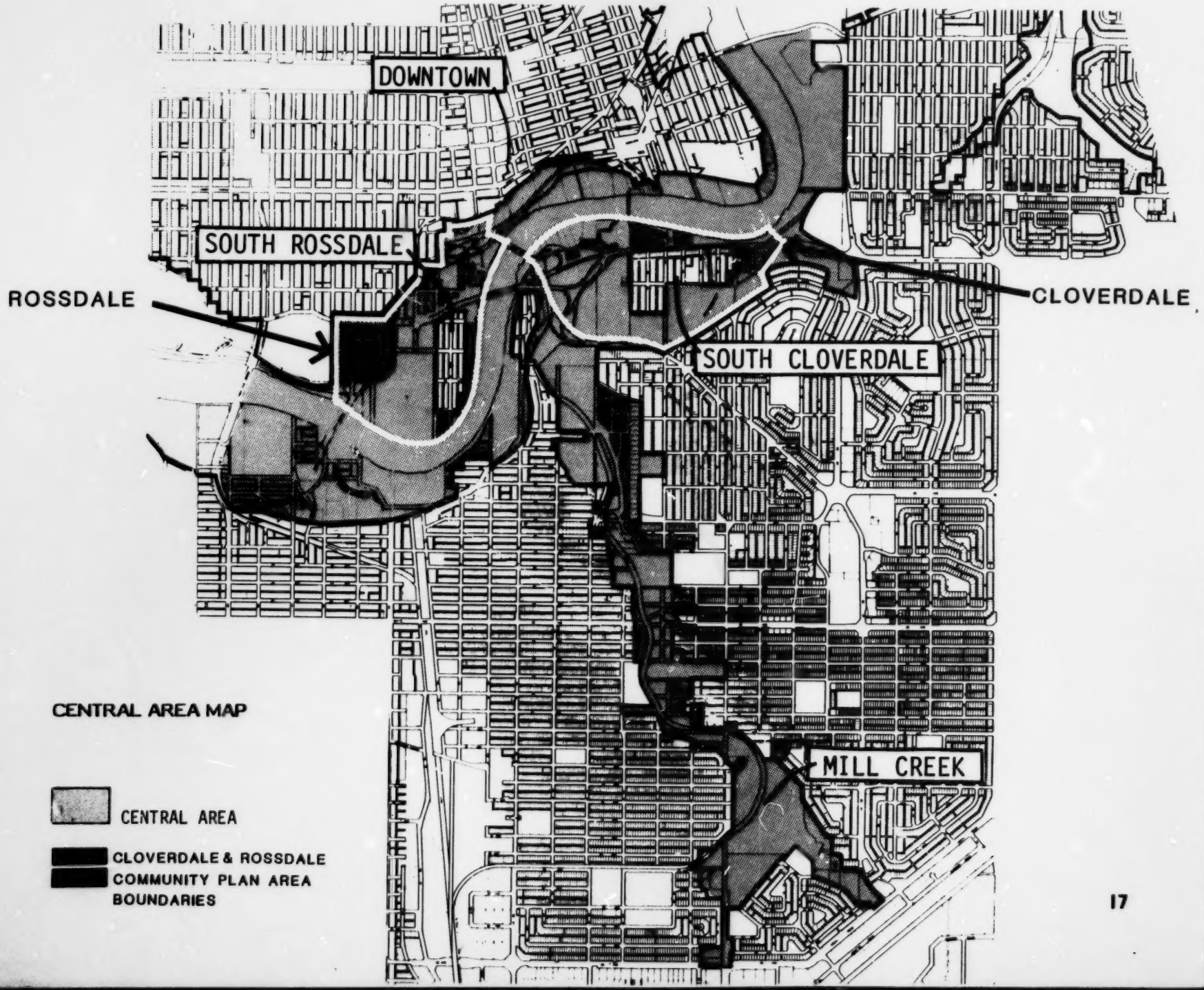
3. Proposed new development should be designed to take advantage of the river location and should be integrated with design concepts of the Capital City Recreation Park.

4. Additional commercial uses may be proposed, and if so, should serve local residential development and existing recreational development, be compatible to parkland development, or be part of a city-wide facility.

5. Ensure the provision of pedestrian links to all the abutting neighbourhoods, including the Downtown and ensure that the facilities that provide these links are of sufficient capacity to accommodate the proposed development for this area.

6. A marketing strategy for the disposal of City-owned lands in Rossdale and Cloverdale will be developed in conjunction with the preparation of the community plans. Disposal of lands will occur upon completion of these community plans and in a manner compatible with the community plans.

7. Residential and other suitable uses, including parks and recreational uses, may be considered in the Rossdale and Cloverdale community plan areas.


DOWNTOWN
SOUTH ROSSDALE
ROSSDALE
CLOVERDALE
SOUTH CLOVERDALE
MILL CREEK
CENTRAL AREA MAP
CENTRAL AREA
CLOVERDALE & ROSSDALE
COMMUNITY PLAN AREA
BOUNDARIES

4. FUTURE LAND USE PROPOSALS

This section outlines the proposed land uses in the North Saskatchewan River Valley Area Redevelopment Plan. It is provided for the convenience of the public and for the guidance of the Development Officer in considering proposed developments and in exercising discretion pursuant to the Land Use Bylaw.

The future land use proposals of this Plan represent the most desirable land use pattern for the North Saskatchewan River Valley and Ravine System, based upon the Plan's objectives and policies.

These land use proposals comply with the requirements of the Planning Act and conform with the objectives and policies of the Edmonton General Municipal Plan, Bylaw 6000, as amended.

The future land uses are indicated on Schedule C and are classified as follows:

Metropolitan Recreational Use and Environmental Protection
Public Utilities
Transportation
Residential

Adjustments to the future land use pattern will be made from time to time to accommodate proposals of other Plans and studies. For example, the Parks and Recreation Management Plan and the proposed River Valley Resource Management Plan.

For the Central Area of the Plan, the future land use proposals will be determined in Stage 2 of this Plan.

4.1 METROPOLITAN RECREATIONAL USE AND ENVIRONMENTAL PROTECTION

Lands in this area are primarily owned by the City of Edmonton, irrespective of whether such lands have been defined as formal public parks or are in a vacant, developed or natural state. All such lands have been acquired in the past by the City for municipal purposes for the development of public parks or for environmental protection. Lands that are privately owned may continue to be used for those uses listed under A - Metropolitan Recreation District (Section 540) of the Edmonton Land Use Bylaw.

4.2 PUBLIC UTILITIES

This proposed use indicates lands that are designated for public utility installations, services and facilities under Section 520, Edmonton Land Use Bylaw. This would include such uses as water treatment plants, power stations, snow disposal sites, and sewage treatment plants.

4.3 TRANSPORTATION

Future transportation uses follow the intent of the General Municipal Plan, Bylaw 6000 which limits the location, development and improvement of major transportation facilities (primarily roadways) to direct crossings of the River Valley and tributary ravines.

4.4 RESIDENTIAL USES

Land uses which are presently designated for residential use, under the Edmonton Land Use Bylaw, may continue to be used for residential use.

4.5 DISCRETIONARY USES

The Development Officer in considering Discretionary Uses in all Land Use Districts within the boundaries of this Bylaw will consider the objectives and policies of this Bylaw, and may require applicants to submit information regarding the environmental impacts of proposed development and any measures taken to eliminate, minimize or mitigate such impacts. The Development Officer may require that this information be presented in a form outlined in Schedule D.

SCHEDULE A - PLAN BOUNDARY
(See Attached envelope)

SCHEDULE B - EXISTING LAND USE
(See attached envelope)

SCHEDULE C - PROPOSED LAND USE
(See attached envelope)

SCHEDULE D - ENVIRONMENTAL IMPACT SCREENING ASSESSMENT MODEL

This process is intended to ensure that the objectives and policies relating to environmental protection and land use planning goals in the North Saskatchewan River Valley Area Redevelopment Plan are achieved.

The process, as outlined, contains a brief synopsis of each characteristic and a chart which contains the components that require review.

For the Plan area outside the Central area, the report should contain a summary of the environmental costs and benefits associated with a proposed public development and a proposed development which is a discretionary use of the Edmonton Land Use Bylaw. This report would also be required for all major public facilities proposed for the Central area.

HYDROLOGY

The delineation of the 1:100 year floodplain provides a boundary that indicates areas that have a 1 in 100 chance of flooding in any one year. Any development within the floodplain should be discouraged.

In addition, runoff characteristics are relevant to identify locations where the buildup of moisture could potentially cause concern over a long period of time. (i.e. soil movement).

The depth of the watertable is an indicator of areas that are developable/undevelopable. For example, a high water table could cause piles at foundations to shift and crack over time. Thus, these hydrologic concerns are imperative to the review process.

GEOLOGY/ GEOMORPHOLOGY

In the river valley, there are many identifiable areas of bank instability. The cause of the slope failures can be attributed to the following:

a) lateral river erosion of the unprotected toe of the Valley, especially on the outside edge of the meanders of the river;

b) seepage and springs flowing from the valley slopes;

c) remnants of old coal mines beneath the valley slope (i.e. Grierson Hill);

d) poor construction practices associated with the urban development near the crest of the slope;

e) maintenance techniques associated with the existing land uses on the top of the bank (i.e. lawn watering, removal of trees);

f) removal of the slope as a result of past development.

Existing landslides are differentiated on the basis of size (minor/major) and level of movement (active/inactive). Both inactive and active slides are regarded as areas of instability; and therefore are identified as hazard lands. Disturbance of the inactive slides (i.e. redevelopment) could initiate the slide to become active once more.

Thus, areas identified as major inactive/active slope failures should come under close scrutiny when a proposal is forwarded because of the possibility of additional damage to the environment. Further, an education programme should be initiated whereby maintenance techniques (i.e. lawn watering, removal of vegetation) that can be considered as factors attributing to slope failures, are discouraged.

VEGETATION

Natural vegetation plays an important role within an urban area. Apart from its obvious aesthetic and recreational value, vegetation functions as a means of controlling noise, heat, run-off and soil erosion.

Vegetation absorbs surface run-off and offers resistance to water flow. In addition, the roots of any form of vegetation act as a soil stabilizer. The removal of any form of vegetation could cause damage to the environment (i.e. accelerate soil erosion; intensify the affect of flooding).

Therefore, a special condition should be placed on any form of redevelopment/development planned for the river valley and ravine system indicating that natural vegetation be preserved.

Further, the existence of vegetative communities provide a habitat for wildlife. If an area is deemed as an important wildlife habitat, concessions on development may be necessary.

SOILS

The soils that dominate the river valley and ravine system have resulted from the downward occurring action of the valley in postglacial times. As a result of this process, the soil unit left behind is chronologically young and more susceptible to erosion than other older soil units within the urban environment of Edmonton.

Based upon a variety of soil properties, each soil unit has been rated according to their relative trafficability, erodibility, infiltration capacity, frost heave potential and shrink/swell potential. Potential run-off and erosion potential models have been developed incorporating the aforementioned ratings of each soil unit. These

models are used as an indicator of potential problems of the soil unit. The two models are described below.

i) Potential run-off

Potential run-off involves the analysis of the slope and the infiltration capacity of the soil unit. A numerical rating has been allocated for each soil unit according to characteristics discussed above. To formulate run-off characteristics, the following matrix is utilized.

POTENTIAL RUNOFF

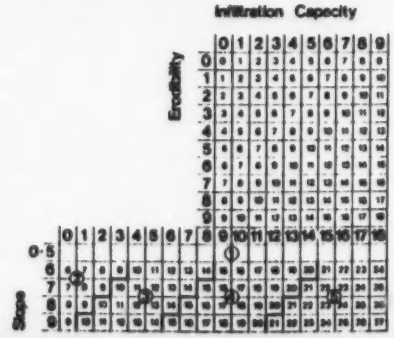
1 - Low runoff
2 - Moderate - Low runoff
3 - Moderate runoff
4 - Moderate - High runoff
5 - High runoff

A constraint has been identified if an area has either low or moderate-low runoff characteristics.

ii) Erosion Potential

To define the erosion potential of an area, an analysis of the slope along with the infiltration capacity and erodibility rating of the soil unit is undertaken. The following matrix is utilized to formulate erosion characteristics.

EROSION POTENTIAL



1 - Low
2 - Moderate - Low
3 - Moderate
4 - Moderate - High
5 - High

HISTORICAL/ ARCHAEOLOGICAL

The identification of historical/archaeological sites within the River Valley and Ravine System does not indicate the existence of an environmental hazard. However, it does provide the location of potential areas to be preserved when future development/redevelopment is being proposed. (NOTE: Alberta Culture, Archaeological Survey of Alberta, decides if a historical impact assessment is required under the Historical Resources Act, on development/redevelopment applications.)

The remaining characteristics (i.e. surrounding land use, noise and odour impact) do not require further discussion because of their obvious implications in the process.

NOTE: A more detailed administrative policy for all City Departments to use will be developed based on this model.

SCHEDULE D - ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

CHARACTERISTIC	CONSTRAINTS	DATA	EFFECT ON THE ENVIRONMENT	ENVIRONMENTAL COSTS AND BENEFITS	TRADE OFFS	ALTERNATIVES
Hydrology	- Within 1:100 Flood Plain - Outside 1:100 Flood Plain - Runoff Characteristics - Identification of Springs - Depth of Watertable					

Geology/ Geomorphology	- Identification of Geomorphological Boundary
	- Identification of Seepage Points
	- Modifying Process:
	  - slope failure: active, recurrent
	  - slope failure, inactive
	  - river erosion
	  - high water table potential
	  - previous mining activity
	  - previously subjected to river erosion
	  - slip-off slope
	- Genetic Class					

Vegetation	- Rare or Endangered Flora or Fauna (i.e. unique species) - Important Wildlife Habitat - Value of the stability of slope					

CHARACTERISTIC	CONSTRAINTS	DATA	EFFECT ON THE ENVIRONMENT	ENVIRONMENTAL COSTS AND BENEFITS	TRADE OFFS	ALTERNATIVES

Soils	- Soil Association and Unit
	- Dominant Soil
	- Soil Characteristics:
	  - erodibility
	  - trafficability
	  - shrink/swell potential
	  - frost heave potential
	  - infiltration capacity
	- Soil Models
	  - potential runoff
	  - erosion potential					

Wildlife	- Identification of Wildlife Habitat Areas (Note: This analysis can be incorporated into the vegetative component)					
Noise/Odour/Visual	- Identification of Noise/Odour/Visual Impacts					
Historical/ Archaeological	- Identification of Historic/Archeological Resources (if required by Alberta Culture) - preservation sensitivity (Note: all EIA applications should be reviewed so that the significant Parks and Recreation resources can be preserved - biophysical inventory contains data for the review, thus no cost to the applicant)					
Surrounding Land Use	- Compatible - Not Compatible					